

**MILITARY RUSSIA**  
DOMESTIC MILITARY EQUIPMENT (after 1945)

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ARTICLES

FORUM

## Husky (SPMBM Malakhit project)

**DATA FOR 2019 (standard update)**  
**"Husky" (project)**  
 ★★

A project for a 5th-generation multipurpose nuclear-powered submarine with cruise missiles (SSGN). The 5th-generation SSN is being developed by the Malakhit Design Bureau, as first reported in the media on 16.12.2014. It was also reported that the development was being carried out by the design bureau on its own initiative, without a technical assignment from the Russian Ministry of Defense. On 17 March 2016, the media reported the name of the project - "Husky". The first statements by the Malakhit Design Bureau's management regarding the 5th-generation SSN were recorded in the media on 09.02.2014 ( [source](#) ).

On 07 July 2015, it was reported (media, 07.07.2015, [source](#) ) that the SSN is being designed by the Malakhit Design Bureau on one basic platform in two versions:

- a multipurpose SSN aimed at countering enemy SSNs;
- an anti-aircraft carrier SSN;

On August 8, 2016, [it was reported](#) that a contract was signed between the Malakhit Scientific Research Institute and the Russian Ministry of Defense for the development of the submarine. Apparently, this concerns research and development work on the design of the future submarine, and the technical design of the submarine will begin after 2020. In the first half of 2018, the Malakhit Scientific Research Institute successfully defended the first stage of the submarine design - the preliminary design - to the customer ( [source](#) ). In May 2018, it was reported that the research and development work carried out on the design of this submarine was "recognized as unsatisfactory" by the customer, since it "does not meet the customer's requirements." But at the same time, it was later reported that in the first half of 2018, the Malakhit Scientific Research Institute successfully defended the first stage of the submarine design - the preliminary design - to the customer ( [source](#) ).

The construction of the new submarine is planned to begin at PO Sevmash before 2020 (media, 28.07.2015, [source](#) ). Later, plans were reported to build the Husky submarine after 2023. The Husky submarine is included in the shipbuilding program for 2018-2027.

There is no other information.

Предположительный вид многоцелевой ПЛА проекта "Хаски" СПМБМ "Малахит" (MilitaryRussia.Ru 01.05.2018)

Hypothetical appearance of the Husky class submarine (MilitaryRussia.Ru, 01.05.2018).

Author: [DIMMI](#)

Created: 17.03.2016 21:31:29

Comments: [3](#)

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## RPK-2 Vyuga, 81R missile - SS-N-15 STARFISH

**DATA AS OF 2018 (standard replenishment)**  
**RPK-2 "Vyuga", D-90 / 81R / 81RA / "Vyuga-53" missile - SS-N-15 STARFISH**  
 ★★

Anti-submarine missile system for use from submarines. In terms of ideology, the system is similar to the Subrock anti-submarine system (USA) and was created by analogy with it. The development of the system was initiated by Resolution of the Council of Ministers of the USSR No. 111-463 of October 13, 1960 "On the creation of new anti-submarine missile systems". The development was initially carried out under the code D-90 in OKB-9 (Sverdlovsk), General Designer - Fyodor Fyodorovich Petrov, Lead Designer - N.G. Kostrulin. The 533 mm caliber missile version was designated D-90S ("special charge"). In OKB-9, a preliminary design of a missile with lattice rudders and an engine for the missile were developed, and experimental studies were conducted - positive results were obtained in tests of movement in the initial section, in the transition section, and in the air section ( [source](#) ). The plan for conducting experimental studies and developing a preliminary design for the Vyuga complex (subject B-XII-54) was approved on 31.01.1961 by the Military-Industrial Complex under the USSR Council of Ministers. The development of the nuclear warhead was carried out by VNIIA (chief designer A.A. Brish), the development of the missile control system was carried out by NII-25 (later renamed NIIP, chief designer A.S. Abramov). The development of the V-1 test rigs (a redesigned PSD-4 floating rig from the R-21 missile) and an experimental submarine for testing was carried out by SKB-143 (chief designer A.V. Kuteinikov).

Two types of missiles with different performance characteristics were created for the complex: for launching from 533 mm torpedo tubes "Vyuga-53" / 81RA and for 650 mm TA - "Vyuga-65" / 81RT. Decoding the designations: "RA" - nuclear missile, "RT" - missile with torpedo. First of all, the development of the "Vyuga-65" complex was started as a more complex one.

The test schedule for the 533 mm caliber missile was adopted in 1963 after the approval of the draft design. On July 20, 1964, by decision of the Military-Industrial Complex under the Council of Ministers of the USSR, due to unsatisfactory results of work on the complex, together with a group of designers (OKB-9-II), they were transferred to OKB-8 (Sverdlovsk, later - OKB "Novator"), L.V. Lyulyev was appointed chief designer of the complex. The transfer of the topic to OKB-8 was confirmed by the decision of the Military-Industrial Commission of January 28, 1965.

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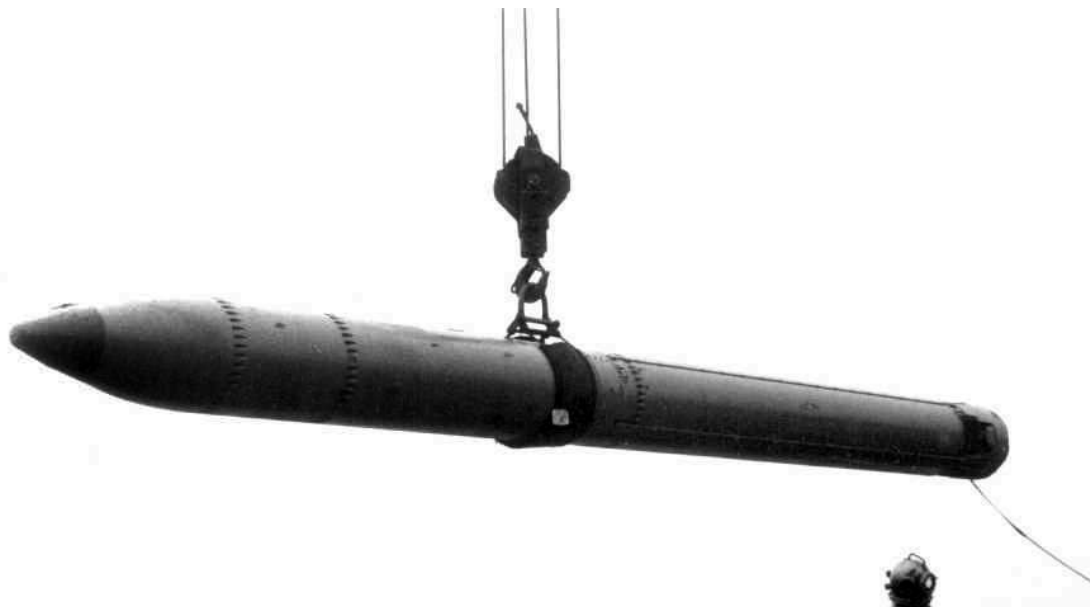
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Missile 81RA of the RPK-2 Vyuga complex - SS-N-15 STARFISH ( <http://forums.airbase.ru> , 2009).

Author: [DIMMI](#)

Created: 05.02.2011 19:50:41

Comments: [6](#)

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### BrahMos complex, SK310 / PJ-10 missile

**DATA FOR 2018 (standard update)**

**BrahMos complex / BrahMos, SK310 missile / BrahMos PJ-10**

**ROC "Alliance"**

**BrahMos block I missile**

**BrahMos block II missile**

**BrahMos block III**

**missile SK-310A / BrahMos-A missile (aircraft)**

★★★★

Anti-ship cruise missile / cruise missile for firing at ground targets. Analogue of the domestic cruise missile "[Yakhont](#)" / "[Onyx](#)" developed by NPO "Mashinostroyeniye" (OKB-52 V.N.Chelomey) produced and developed for various platforms by the joint Russian-Indian enterprise "BrahMos Aerospace Pvt. Ltd." (established on 12.02.1998). In 1999, work on the complex began in related design bureaus (for example, NPO "Iskra"). The missile model was first shown at the MAKS-2001 air show. Testing of BrahMos missiles began no later than 2001, and their joint serial production began in January 2004. The sea-based BrahMos missile in the anti-ship cruise missile version (for surface ships) was accepted into service with the Indian Navy in 2006. The delivery of land-based missile systems to Indian coastal defense units began in 2007.

It is planned to accept into service different versions of the missiles (by basing) - land-based (wheeled transporter with vertical launch container, accepted into service), air-based version (carriers - Su-30MKI and other aircraft of the Indian Air Force), a complex for ships (accepted into service) and submarines of the Indian Navy. The Indian side is engaged in the creation of the control system of the complex. Some components for the BrahMos missiles are produced by NPO Strela (Orenburg, missile production). The possibilities of joint production as of 2009 are estimated at 200 anti-ship cruise missiles per year (2005-2006 - 100 units per year). The complex is offered for export. Many characteristics are identical to those of the [Yakhont/Onyx](#) anti-ship missiles .

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[Sierra](#) 2016-10-0

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[Sierra](#) 2011-05-3



Launch of the BrahMos block III missile at the Pokharan test site in Rajasthan, 18.11.2013 (photo - Indian Ministry of Defense via <http://ria.ru> ).

Author: [DIMMI](#)

Created: 05.09.2010 01:54:01

Comments: [61](#)

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### NIR West (project)

**DATA AS OF 2018 (standard update)**

**R&D "Vest"**

Project of a submarine-launched ballistic missile (SLBM). Work on the preliminary design of the missile was carried out as part of the R&D "Vest" by OKB-385 (now the Makeyev State Research Center) in the second half of the 1980s. According to sources, the project involved creating a relatively small-sized

missile with a single-block warhead. The missile's development, testing and adoption into service were planned as part of the Fleet armament program for 1991-2000. There is a possibility that the missile developed as part of the R&D "Vest" could have formed the basis for the initial version of the technical proposal for the development of the D-35 missile system, which was worked out by the Makeyev State Research Center in 1986-1987 on the instructions of the USSR Navy. To carry the complex, it was planned to develop the Project 935 Borei-2 SSBN with 12 SLBMs ( [source](#) ). Work on the Vest R&D project was stopped before reaching the R&D stage - the project was closed on July 27, 1989 by decision of the Deputy Commander-in-Chief of the USSR Navy. At the same time, the development of the Project 935 Borei-2 SSBN was also closed ( [source](#) ). ★★



Model of submarine pr.935 in the museum of the Rubin State Research Center (<http://forums.airbase.ru>).

Author: [DIMMI](#)

Created: 05.01.2018 02:31:17

Comments: [5](#)

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### X-35 / 3M24 - SS-N-25 SWITCHBLADE / AS-20 KAYAK

**DATA AS OF 2016 (standard replenishment)**

**Complex "Uran", missile Kh-35 / 3M24 / "article 78" - SS-N-25 SWITCHBLADE**

**Complex "Uran", missile Kh-35 / 3M24 / "article 78" - AS-20 KAYAK / AS-X-20 Harpoonski**

★★

Anti-ship cruise missile. Preliminary development of the small-sized anti-ship missile project was conducted by Zvezda Design Bureau starting in 1977. The decision to create a missile for the Uran ship-based missile system was made by the Resolution of the CPSU Central Committee on March 16, 1983, after studying the experience of using the Exocet anti-ship missile during the Anglo-Argentine conflict (May 1982). The development was carried out by Zvezda Design Bureau (former OKB-455, now part of KTRV), General Designer - V.N. Bugaisky (later - V.G. Galushko). Chief Designer of the system - Georgy Ivanovich Khokhlov. Chief Designer of the direction (as of 2015) - Nikolay Anatolyevich Vasiliev ( [source](#) ). The first version of the missile's preliminary design was reviewed in 1983 and was sent back for revision due to non-compliance with the requirements for the radar homing head characteristics ( [source](#) ). According to sources, another Resolution on the development of the complex was adopted by the USSR Council of Ministers on April 16, 1984 ( [source](#) ).

**Tests** . The first launch from a ground-based launch pad was planned for November 4, 1985, but due to an automatic failure (incorrect information was given about the opening of the TPK covers), the launch did not take place. The first successful launch was carried out (on the second attempt on this day) on November 5, 1985 at the test site of the 31st Test Center of the USSR Ministry of Defense (Feodosia, Crimea). According to the launch program, the missile was supposed to fly 40 km. The missile successfully exited the TPK, flew about 50 meters and fell into the sea ( [source](#) ). This launch is considered the first launch in the flight design testing program of the Kh-35 anti-ship missile.

The first public demonstration of the missile took place at the Mosaeroshow-1992 exhibition.

The Kh-35 missile is designed to destroy missile, torpedo, artillery boats, surface ships with a displacement of up to 5,000 tons and sea transports.





The Kh-35E missile without a booster engine at one of the naval exhibitions in St. Petersburg, 2000s ( <http://army.lv/> ).

Author: [DIMMI](#)

Created: 02.02.2016 13:28:30

Comments: [2](#)

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### Project of the prospective SLBM MIT

**DATA AS OF 2017 (in progress)**

**Project of the advanced MIT SLBM**



Submarine-launched ballistic missile (SLBM) with intercontinental range. Project of the modernized version of the [Bulava](#) SLBM developed by the Moscow Institute of Thermal Engineering (MIT). In May 2016, a meeting of chief designers was held on the program for creating a new version of the Bulava SLBM missile system and a new-generation carrier submarine with the participation of MIT ( [source](#) ).

Author: [DIMMI](#)

Created: 02.09.2017 20:26:10

Comments: [1](#)

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### pr.23550 Arctic

**DATA FOR 2017 (standard update)**

**project 23550 "Arktika"**  
**"Ivan Papanin"**



Multipurpose ice-class patrol ship of the 2nd rank. The project was developed by the Almaz Central Marine Design Bureau (St. Petersburg). The contract for the construction of two ships of the project was signed on April 25, 2016. Construction of the lead ship began in the fall of 2016 at Admiralty Shipyards. The official keel laying of the ship Ivan Papanin (plant number 02460) took place on April 19, 2017. The lead ship is planned to be launched in 2019 and transferred to the Fleet in 2020 ( [source](#) ).

The ship is capable of breaking ice up to 1.5 m thick. The ship is designed to protect and monitor Arctic water resources; escort and tow detained ships to port; escort and support supply vessels; participate in rescue operations; transport special cargo; in addition, for independent artillery strikes against sea, coastal and air targets. The new multifunctional vessel is capable of effectively performing tasks in the Arctic zone both independently and as part of groups (detachments) of combat ships, as well as performing escort functions on Arctic communications.



Drawing of a multi-purpose patrol ship pr.23550 ( <http://admship.ru> ).

Author: [DIMMI](#)

Created: 22.04.2017 00:42:44

Comments: [1](#)

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## pr.20386

DATA AS OF 2017 (in progress)

pr.20386

"Daring"



Multipurpose corvette. The project was developed by the Almaz Central Marine Design Bureau (Saint Petersburg), the chief constructor was I.G. Zakharov ( *history - keel board of the lead ship of the project* ). On April 17, 2014, the Russian Ministry of Defense and the Almaz Central Marine Design Bureau signed contract No. H/1/1/0201/GK-14-DGOZ for the implementation of the experimental design work "Project 20386". As of 2016, the media reported plans to build at least 10 ships of the project.

The lead ship of the project, Derzkiy, was laid down on October 28, 2016 at the Severnaya Verf Shipyard (Saint Petersburg) under the plant No. 1009. In 2016, there was information in the media that in addition to Severnaya Verf, Yantar Shipyard (Kaliningrad) could also join the construction of the Project 20386 corvettes, but as of August 2017, this has not happened.



Drawing of corvette pr.20386 (<http://ruspodplav.livejournal.com>).

Author: [DIMMI](#)

Created: 07.08.2017 21:37:41

Comments: [1](#)

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pr.11356 / 11356R - Mod. KRIVAK-III

DATA AS OF 2017 (standard replenishment)

pr.11356 - Mod. KRIVAK-III

"Talwar" "Teg"

"Trishul" "Tarkash"

"Tabar" "Trikand"

★★★★

Project 11356R - Mod. KRIVAK-III

"Admiral Grigorovich"

"Admiral Essen"

"Admiral Makarov"

"Admiral Butakov"

"Admiral Istomin"



2nd rank patrol ship / frigate. Development of the export version of the frigate / guard ship was started in the mid-1980s by the Severnoye Design Bureau (Leningrad) on the basis of the Project 11351 guard ship, chief designer - Vilor Perevalov. During the design, the ship was supposed to be equipped with Uran anti-ship missiles and a new type of air defense missile system. The first series of Project 11356 frigates (3 units) for the Indian Navy was built at the Baltic Shipyard (St. Petersburg) in 1999-2004. The contract for delivery was signed on November 17, 1997. The lead frigate was laid down on the slipway in 1999. The first two ships of the series were launched in 2000. The lead frigate of the series, INS Talwar, was handed over to the Indian Navy on June 18, 2003. In 2007 (the contract was signed in 2006 for the amount of 1.6 billion USD), construction of the second series of Project 11356 ships for the Indian Navy (3 units) began. The composition of the equipment has been changed, the ships are equipped with the BrahMos anti-ship missile system.

Construction of Project 11356R ships for the Russian Navy began on December 18, 2010 with the laying of the first frigate, Admiral Grigorovich, from a series of three ships of the project. In total, as of 2012, it is planned to build 6 frigates. The construction of the first three is being carried out under contract No. 704/27/2/ONK/KN/1176-10 dated 28.10.2010, the second three under contract No. 3/1/1/0553/GK-11-DGOZ dated 13.09.2011 ( *source - Annual report of SPKB, 2011* ). Within the framework of the first contract, on 29 March 2011, PSZ Yanrar signed agreements with Severnoye Design Bureau:

- for technical support and author's supervision during the construction of hull No. 01357 of project 11356 for 166 million rubles,
- for the development of documentation and technical support for the construction of ships of project 11356 - for 710.96 million rubles.



The Admiral Grigorovich frigate, project 11356R, during sea trials in the Baltic ( <http://shipyard-yantar.ru/> ).

Author: DIMMI

Created: 12.03.2009 11:52:19

Comments: 32[READ THE FULL ARTICLE →](#)pr.641B - TANGO

DATA FOR 2012 (standard replenishment)

pr.641B "Som" - TANGO

★★★★



Large (ocean-going) diesel-electric submarine (type "B"). The new project of a large boat was developed on the basis of the submarine of project 641 by the Central Design Bureau of Marine Engineering "Rubin". Chief Designer - Z.A.Deribin, later - Yu.N.Kormilitsyn. Construction of a series of boats was carried out at Plant No. 112 "Krasnoye Sormovo" (Gorky) in the period from 1971 (the lead submarine B-443 was laid down on September 17, 1971, launched on September 2, 1972, accepted by the Navy on December 30, 1972) to 1982. A total of 18 submarines were built. The delivery of the boats to the Fleet took place at the finishing base of the plant in Sevastopol. Submarines of project 641B were part of the Black Sea (B-380), Northern and Baltic fleets.



Submarine pr.641B - TANGO ( <http://militaryphotos.net> ).

Author: [DIMMI](#)

Created: 15.06.2009 12:59:38

Comments: [33](#)

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pr.20380 - STEREGUSHCHY

DATA FOR 2017 (standard update)



**pr.20380 "Korvette-1" - STEREGUSHCHY**

"Stereuschiy"	"Stable"	"Hero of the Russian Federation Aldar Tsydenzhapov"
"Smart"	"Loud"	"Sharp"
"Boyky"	"Zealous"	
"Perfect"	"Strict"	



Second-rank patrol ship of the near sea zone (SKR) / corvette. The ship design was developed by the Almaz Central Marine Design Bureau (Saint Petersburg) in accordance with a competition held by the Russian Navy Command to create a simple and inexpensive ship of this class. The chief designer of the project is Igor Nikolaevich Ivanov. Scientific support for Project 20380 was provided by the 1st Central Research Institute of the Russian Ministry of Defense. The technical design was completed in early 2001.

The lead ship of the project, plant No. 1001 "Stereuschiy", was laid down at the Severnaya Verf Shipyard (Saint Petersburg) on 21.12.2001, launched on 14.05.2006 and accepted by the Russian Navy (Baltic Fleet) on 27.02.2008 (14.11.2007 according to other data). On December 21, 2011, the Russian Government adopted Resolution No. 1080-31 appointing Severnaya Verf as the sole supplier of an additional series of 9 corvettes of Project 20385 / 20380M. According to plans for 2011, a series of 20 corvettes of the project was to be built. The first serial corvette of Project 20380 was accepted by the Russian Navy on October 14, 2011. By default, the data on the corvette of Project 20380. On the official website of the Almaz Central Marine Design Bureau, the corvette project 20380 is called "Tiger", and on the Severnaya Verf website it is indicated that Project 20382 "Tiger" is an export version of the corvette of Project 20380.

A total of 6 ships of the project have been built and are under construction (as of mid-2013). In the future, it is planned to build only corvettes [of Project 20385](#).





Corvette "Stoykiy" - the third serial corvette of project 20380 during testing in Baltiysk, 11.04.2014 (photo - Vitaly Spirin, <http://www.nordsy.spb.ru>).

Author: [DIMMI](#)

Created: 13.02.2011 15:58:53

Comments: [56](#)

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### 3K96 Redut / 3K96-2 Poliment-Redut

**DATA AS OF 2017 (standard replenishment)**

**Complex 3K96 "Redut" / 3K96-2 "Poliment-Redut", missiles 9M96, 9M96D, 9M100**

★★★

Anti-aircraft missile system with vertical launchers. The first information about the new SAM system with vertical launchers appeared after the laying of the new SRK "Novik" project 12441 "Grom" at the shipyard "Yantar" (Kaliningrad) in 1997. There was an assumption that this is a "lightweight" version of the SAM "Rif-Fort". The technical design of the SKR project 12441 was approved in 1994, based on which it can be concluded that as of 1994, the development of the SAM "Poliment" was already underway at least at the stage of a draft design. The development of the complex is being carried out by the GSKB of the air defense concern "Almaz-Antey". In its capabilities and partially in its composition, the SAM is maximally unified with the SAM "Vityaz" air defense system.

In 2009, the first stage of comprehensive preliminary testing of products within the framework of the Poliment-Redut-R R&D project was completed (Almaz-Antey Air Defense Concern, *source - Annual Report for 2009*). In 2010, Almaz-Antey Air Defense Concern continues testing components of the Poliment-Redut ZRAS, conducts ground tests of the 9M96 missile, and manufactures prototypes of the 9M96D and 9M100 missiles (*source - Annual Report for 2010*).

In 2011, the Almaz-Antey Air Defense Concern delivered a prototype of the Redut SAM system to the first serial corvette of [Project 20380](#) (Soobrazitelny, plant No. 1002), began joint flight tests of the ship's control system and 9M96 missiles, completed preliminary tests of the main components of the Poliment-Redut SAM system, and delivered its elements to the lead frigate of [Project 22350](#), Admiral of the Fleet of the Soviet Union Gorshkov. A pilot batch of 9M96D missiles was manufactured, autonomous flight tests were started in ground-based testing range conditions, and the main components of the 9M100 missile were manufactured and conducted preliminary tests (Almaz-Antey Air Defense Concern, *source: 2011 Annual Report*). In 2012, the bench testing of the on-board equipment of the 9M96D and 9M100 missiles was completed, and the first ground-based full-scale range tests of the missiles were conducted (*source - Almaz-Antey Annual Report 2012*).

On 14 May 2012, the media reported that the complex was entering the final stage of testing - launches from the standard carrier of the first serial corvette of Project 20380 into the sea - and by the end of 2012, the tests of the complex were planned to be completed. In fact, in 2012, joint flight tests of the Redut SAM system were started on the corvette of Project 20380 (*source - Almaz-Antey Annual Report 2012*). At a briefing by the General Director of the Almaz-Antey Air Defense Concern, Vladislav Menshchikov, which took place during the MAKS-2013 air show, it was reported that the tests of the air defense system were interrupted in 2012 due to a fire on the Soobrazitelny corvette, [project 20380](#). In 2013, the ship arrived after repairs to resume SAM testing. On the lead frigate of [project 22350](#) "Admiral Gorshkov" SAM tests will begin no earlier than 2014, once the ship is ready. A set of 9M96, 9M96D and 9M100 missiles for testing from ships is ready (*source*).

In 2013, a prototype of the 3K96-2 SAM was delivered to the lead frigate of [Project 22350](#) "Admiral Gorshkov", and additional ground tests of the 9M96 missile were completed (*source - Annual report of the Almaz-Antey Air Defense Concern for 2013*).

On June 2, 2014, the media [reported](#) that on May 30, 2014, the corvette "Soobrazitelny" Project 20380 of the Baltic Fleet successfully repelled an attack by a cruise missile target, which was launched from the R-257 missile boat using the "Redut" SAM. The target was destroyed. Apparently, this is the first successful use of the Redut air defense missile system from a warship.



Launch of the Redut air defense missile system during tests on May 30, 2014, Soobrazitelny corvette, Project 20380 (video frame, [source](#) ).

Author: [DIMMI](#)

Created: 17.01.2009 00:28:16

Comments: [55](#)

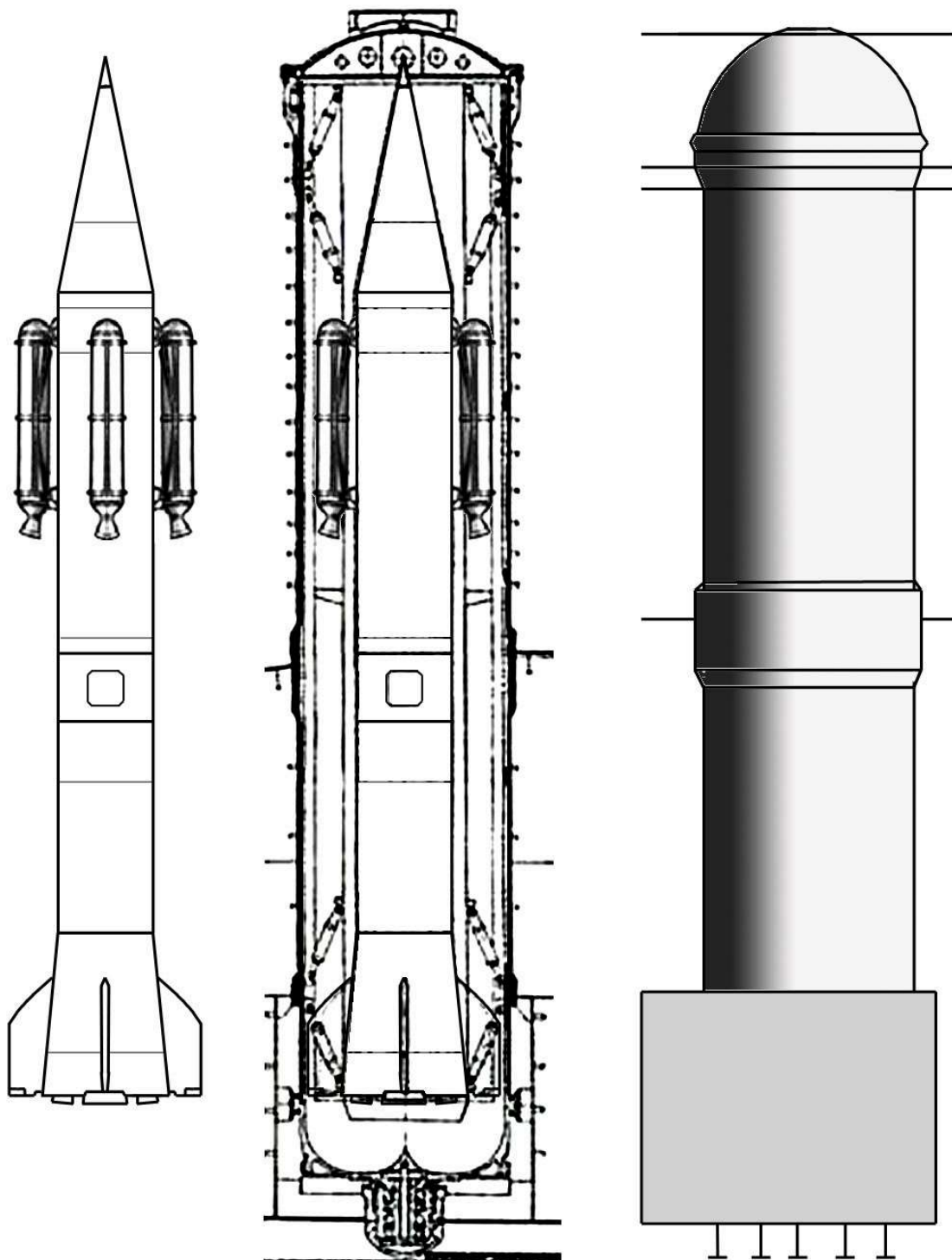
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### D-3 / R-15 (project)

#### **DATA AS OF 2016 (standard replenishment)**

#### **D-3 complex, R-15 missile (project)**

Submarine-launched ballistic missile (SLBM, project). Since 1955, the preliminary design of the complex and the missile was carried out by OKB-1 under the general supervision of S.P. Korolev. By the Resolution of the USSR Council of Ministers of August 25, 1955, the design of a SSN carrier of the D-3 complex - the Project 639 SSBN was assigned. The design of a 6,000-ton boat was entrusted to SKB-143, Chief Designer V.P. Funikov, Deputy (since 1956) G.N. Chernyshev. By the Resolution of the USSR Council of Ministers of August 17, 1956, the development of the D-3 complex and the R-15 missile were transferred to the Dnepropetrovsk OKB-586 (now the Yuzhnoye Design Bureau), General Designer - M.K. Yangel. The creation of the D-3 missile system for the destruction of stationary coastal targets was set by the Resolution of the USSR Council of Ministers dated August 25, 1956. Now it was assumed that the missile system would be equipped with the experimental diesel-electric submarine of Project V-629 (TsKB Volna, one SLBM R-15), while the standard carrier remained the SSBN of Project 639 (SKB-143, now SPMBM Malakhit, three SLBM R-15). Another Resolution of the Council of Ministers of the USSR on the creation of the D-3 missile system was adopted on March 20, 1958. During the development of the D-3 project, OKB-586 created the following cooperation: - missile control system - SKB-626 under the leadership of N.A. Semikhatov - launcher - TsKB-34 (chief designer D.E. Bril) - rocket propulsion system - OKB-3 NII-88 (chief designer D.D. Sevruck) By September 1957, OKB-586 presented a preliminary design for the R-15 missile. Tests of the D-3 missile system were initially supposed to be carried out on the Voroshilov Project 26 and Maxim Gorky Project 26bis cruisers converted to Project 33 (in 1957-1958, after a series of discussions, the project to convert the cruisers into experimental vessels was rejected), and joint tests of the missile system and the carrier submarine were planned for the first quarter of 1961. However, by the Resolution of the USSR Council of Ministers of May 4, 1957, the start dates of the tests were adjusted: launches from the land-based test stand were planned to begin in November 1958, and from the experimental submarine of Project B-629 - from August 1960. By the Resolution of the USSR Council of Ministers of December 3, 1958, the shipbuilding program for the period 1959-1965 was approved. from which the project of the SSBN pr.639 was excluded, which also led to the termination of the development of the D-3 missile system. Work on the SLBM was transferred from OKB-586 to V. Makeev's SKB-385. ★★ ★

R-15 missile of the D-3 complex with the SM-73 launcher (12/24/2016, <http://militaryrussia.ru>)Author: [DIMMI](#)

Created: 06.10.2011 16:21:28

Comments: 3

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### Harpsichord-2R-PM

DATA AS OF 2016 (in progress)

**"Klavesin-2R-PM"**

Autonomous unmanned underwater vehicle. The vehicle is being developed by the Rubin Central Design Bureau for Marine Engineering (St. Petersburg) under government contract No. 748/31/664PM-2009/27-09 dated 19.05.2009, concluded with the Ministry of Defense of the Russian Federation ( [source](#) ). Testing of the Klavesin-2R-PM UUV began in 2016. As of the end of September 2016, the vehicle has passed pool tests, paired equipment tests, and is undergoing tests in the Black Sea. Completion of the tests is planned for 2017 ( [source](#) ). The Klavesin-2R type AUVs are being developed by the Rubin Central Design Bureau of Marine Technology together with the Institute of Marine Technology Problems of the Far Eastern Branch of the Russian Academy of Sciences (IPMT FEB RAS, Vladivostok), and are a further development of the Klavesin-1R AUV developed by the said institute. According to previously published information, the Klavesin-2R AUV will be part of the equipment complex of the Project 09852 BS-139 Belgorod and Project 09787 BS-64 Podmoskovie PLASN ( [source](#) ). **The purpose of the apparatus** : search operations and studies of the seabed. ★★





Unmanned underwater vehicle "Klavesin-2R-PM" ( <http://ckb-rubin.ru/> ).

Author: [DIMMI](#)

Created: 29.09.2016 15:55:22

Comments: [1](#)

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## Project of the advanced SLBM GRC Makeyev

**DATA AS OF 2016 (in progress)**

**Project of a promising SLBM of the Makeyev GRC**



Submarine ballistic missile (SLBM) of intercontinental range. An alternative project to the modernized version of the [Bulava](#) SLBM of the Moscow Institute of Thermal Engineering (MIT), the development of which is being carried out by the Makeyev GRC.

On July 14, 2016, Vladimir Degtyar, General Designer of the Makeyev GRC, told the media that the Makeyev GRC is carrying out R&D work on the creation of a new SLBM. The missile may likely replace the [Bulava](#) SLBM.

Author: [DIMMI](#)

Created: 10.08.2016 19:55:50

Comments: [1](#)

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## pr.13560 / PD-72

**DATA FOR 2014 (standard update)**

**pr.13560**

**PD-72**



A large floating dock-slipway for special purposes. Probably developed on the basis of a large covered floating dock of project 1777 (see Modifications). Built under factory number 1551 at the Kherson Shipyard "Pallada". According to another version, the dock was built according to the SPMBM "Malakhit" project at the "Admiralty Shipyards" (Leningrad). Transferred to the Navy in 1985. In 1986, it made the transition to the Northern Fleet and has been used for servicing and routine repairs of various types of nuclear deep-water stations in Olenya Bay since 1986. Since 1991, it has been part of the 29th separate submarine brigade of the Northern Fleet of the Russian Navy. It has repeatedly undergone restoration of its technical condition and repairs.



Floating dock PD-72, Olenya Bay, presumably 2012-2014 ( [source](#) ).

Author: [DIMMI](#)

Created: 09.11.2014 16:50:43

Comments: [5](#)

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## pr.22160

DATA FOR 2016 (standard update)

pr.22160

"Vasily Bykov"

"Dmitry Rogachev"

"Pavel Derzhavin"

"Sergey Kotov"

★★★



Patrol ship / corvette. The project was developed by the Severnoye Design Bureau (St. Petersburg). The keel of the lead ship of the project was laid on February 26, 2014 at the Zelenodolsk Shipyard. In total, the construction of six ships of the project for the Russian Navy was planned within the framework of the armament program until 2019. On April 16, 2014, plans were made public to increase the series to 12 ships.



Model of the corvette pr.22160. Allegedly a variant for the Russian Navy. Photo from the exhibition "Interpolitex-2015" (photo - Nikolai Novichkov, <http://www.janes.com/>, processed).

Author: [DIMMI](#)

Created: 25.02.2014 11:01:22

Comments: [10](#)

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## Mistral / Mistral



**DATA FOR 2016 (standard update)****"Mistral" / Mistral (BPC Russe)**

"Vladivostok"

"Sevastopol"



Landing helicopter-carrying ship-dock (LVKD) / universal landing ship-helicopter carrier / VRS (Bâtiments de Projection et de Commandement - projection and command ship). The development of the ship project began in 1997 as part of the research into the concept of a national ship for amphibious landing operations - CNOA (Concept National des Operations Amphibies, France). The purpose of the ship is to land military units, provide helicopter flights, act as a command center for operations of various forces, and serve as a hospital ship. On December 24, 2010, an agreement was announced with a consortium consisting of the French company DCNS and the Russian USC. When transferring the ships, France will transfer to the Russian side all the technologies it was interested in. The protocol of intent was signed on June 10, 2011 in Paris, the signing of the final contract took place within the framework of the St. Petersburg International Economic Forum on June 17, 2011. According to the agreement, it is planned to build two helicopter carriers in France and two in Russia. Also, the Baltic Shipyard (St. Petersburg) was ordered to build some of the hull sections and the first two ships of the series (12 block sections of the aft parts of the ships). On October 1, 2012, the Baltic Shipyard officially began building the Russian part of the sections of the lead ship for the Russian Navy - Vladivostok.

The design of the ship variant for the Russian Navy (BPC Russe) is being carried out in two stages. The first stage - the preliminary design - was completed in April 2012. The technical design of the ship is to be completed in September 2012. The project provides for modification to accommodate Russian aviation equipment, Russification of user interfaces and adaptation of the ship and flight deck for winter operation (electric heating of the deck, etc.).



Landing helicopter-carrying ship-dock "Vladivostok" - Mistral-type landing ship for the Russian Navy. France, Saint-Nazaire, 21.10.2013 (photo - brunoh, <http://www.shipspotting.com/> ).

Author: [DIMMI](#)

Created: 28.06.2011 17:16:20

Comments: [75](#)[READ THE FULL ARTICLE >](#)**VA-111 Shkval M-5****DATA AS OF 2016 (standard replenishment)****VA-111 "Shkval" complex, M-4/M-5 torpedoes**

Supercavitating jet straight-running torpedo. Developer - GNPP "Region" (as of 2012, part of the "Tactical Missiles Corporation").

**Prehistory** . Research of jet torpedoes with movement in the developed cavitation mode was conducted by the hydrodynamic laboratory of TsAGI on Lake Ladoga on the topics "Belka" and "Kolonok". In 1956, towing of experimental shells was carried out on a cable car, and in 1957, the behavior of the shells was studied in free movement. Stable movement of shells was observed at a distance of 500-600 m. In the second half of the 1950s, the development of a jet cavitating torpedo RKT-45 of 450 mm caliber was assigned to equip torpedo boats. On the topic of RKT-45, an underwater shell with was created at the Research Institute-1 of the USSR Ministry of Agriculture under the leadership of N.P. Mazurov. Solid propellant rocket motor and a disk-cavitator in the warhead. The product was tested on the cableway on Lake Issyk-Kul. At the same time, work was underway to combine the solid propellant rocket motor and the homing system (SSN), chief designer A.V. Minaev. The experimental product was manufactured using [RAT-52](#) rocket torpedo units , launches in the Feodosia area showed the noise (sound pressure) of the solid propellant rocket motor at the level of 0.1-0.2 bar.

In NII-24 (now GNPP "Region") in the second half of the 1950s, they also tried to create a solid propellant rocket motor, but eventually settled on a solid propellant rocket motor with hydrosensitive fuel based on SN-1 solid fuel (highly metallized fuel based on magnesium) for a solid propellant ramjet. Hydrosensitive fuel was created with the participation of the Research Institute of Applied Chemistry (NIIPKh) - variants of pellets with diameters of 40, 140 and 196 mm were manufactured.

There is also an opinion that one of the reasons for the development of the Shkval rocket torpedo was disinformation about tests in the USA of an experimental rocket torpedo with an underwater speed of 200-300 knots.

**The development of the Shkval rocket torpedo** began according to the Resolution of the USSR Council of Ministers No. 111-463 of October 13, 1960 (on the development of the Shkval high-speed underwater missile with a speed of 100 m/s). The torpedo was designed by NII-24 (later NIIPGM, now GNPP Region), the chief designer of the complex was I.L. Merkulov (later - from 1967 to 1979 - former deputy general designer of SKB-385 V.R. Serov, and later - E.D. Rakov). Scientific management of the development was initially carried out at TsAGI by Corresponding Member of the USSR Academy of Sciences G.V. Logvinovich. The preliminary design of the torpedo was approved in 1963.





The M-5 rocket torpedo of the VA-111 Shkval complex at the IMDS-2007 exhibition, St. Petersburg, 30.06.2007 (photo by One half 3544, <http://ru.wikipedia.org> ).

Author: [DIMMI](#)

Created: 16.02.2011 21:29:09

Comments: [20](#)

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5th generation submarine (project of TsKB MT Rubin)

DATA FOR 2016 (standard update)  
5th generation submarine (project)



Nuclear attack submarine of the 5th generation. On March 18, 2013, the media reported that the Rubin Central Design Bureau of Marine Engineering had begun R&D to determine the appearance of a nuclear submarine of the new (fifth) generation. The head of the submarine development group is Sergey Sukhanov (media, November 12, 2013, [source](#) ). It can also be assumed that the Malakhit Scientific and Design Bureau of Marine Engineering will offer its own project of an autonomous attack submarine, which was later confirmed (see the [Husky](#) project ). On June 20, 2015, representatives of the Rubin Central Design Bureau of Marine Engineering confirmed that work on the initial design of the submarine was underway (media, June 20, 2016, [source](#) ).

There is no other information yet.


Author: [DIMMI](#)


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